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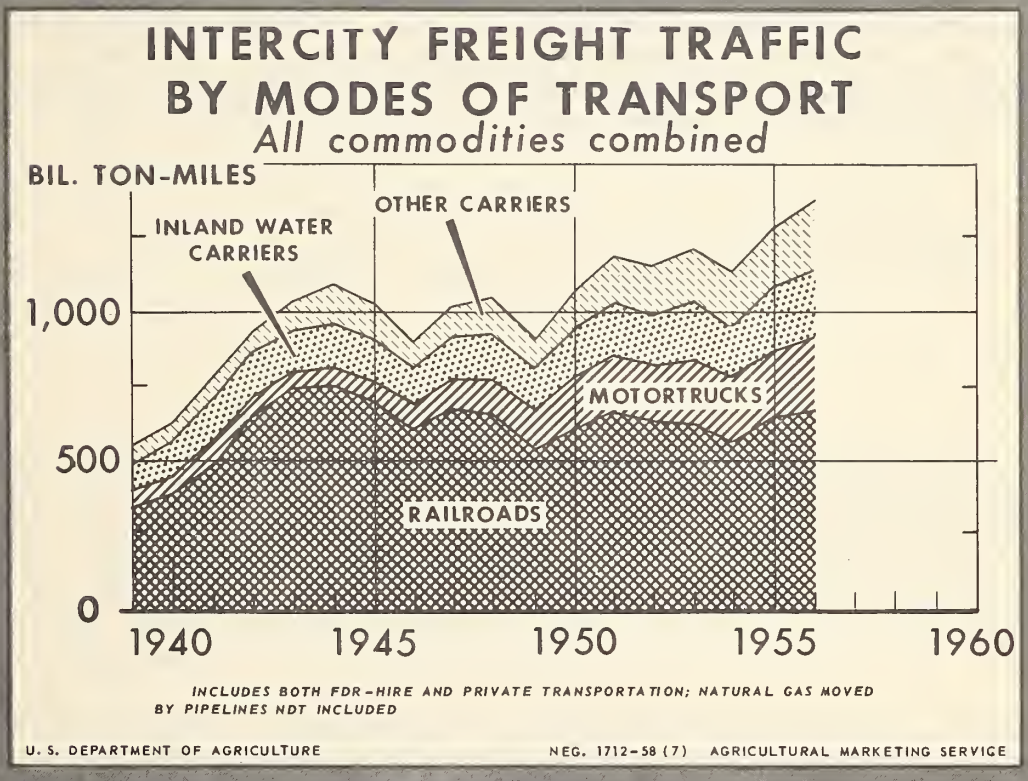
RAIL AND TRUCK SHARES IN THE HAULING OF PERISHABLES

— Some Recent Developments



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A Note about the Cover Chart

The Nation's intercity freight traffic, including that from farms to cities, from cities to farms, and between cities, came to half again as many ton-miles in 1956 as in 1946. Motortrucks have hauled an increasing share: 9 percent in 1946, 19 percent in 1956. The oil pipelines' share is likewise growing.

The railroads' percentage of the total traffic has gone down; but their ton-miles rose from 602 billion in 1946 to 656 billion in 1956. Inland water carriers also haul a big and increasing volume of freight, although a fairly stable percentage. In 1956, the air carriers' ton-miles pushed past the half-billion mark.

RAIL AND TRUCK SHARES IN THE HAULING OF PERISHABLES: SOME RECENT DEVELOPMENTS 1/

From 1946 to 1956, the nation's intercity freight traffic increased from 900 billion ton-miles to 1,400 billion. Railroad traffic rose from 600 billion ton-miles to 660 billion; but the growth for all modes of transport combined was so great that the rail share fell from 66 percent to 48 percent of the total. The inland water carriers barely advanced percentagewise, while their ton-miles grew from 120 billion to 220 billion. The big percentage growth has been that of the trucks and the oil pipelines. The trucks' share was 9 percent in 1946, 19 percent in 1956.

Truck unloads of eight important fresh fruits and vegetables at a group of large cities increased relatively to rail unloads, 1951-57. Records for shell eggs at three large cities and for frozen eggs at two of these cities show the railroads' share had decreased to almost zero and to 6 percent, respectively, by 1957. Because shell eggs moving by rail are easily damaged and hence subject to frequent damage claims, the railroads have shown no eagerness to hold this traffic. With some other commodities, they have demonstrated that an alert policy of offering good service and attractive rates is effective in holding or recapturing traffic.

The Background

The railroads' percentage of the total volume of freight hauled in the United States (all commodities combined) declined in all except one of the 11 postwar years, 1946-56, while the percentage moved by trucks mounted in each year but two. (See table 18 and cover chart.) In 4 years, 1947, 1950, 1955, 1956, the ton-miles moved by each mode of transport rose though the rail ton-miles failed to rise as fast as the ton-miles hauled by the other modes of transport combined.

1/ Prepared by Clem C. Linnenberg, Jr., Transportation Economist, Transportation and Facilities Branch, Agr. Market. Serv. A more detailed analysis of fresh fruit and vegetable transportation data for 1951 and 1954 appeared in the recently published report, Shifts in Rail and Truck Transportation of Fresh Fruits and Vegetables, by James M. Henderson and Clem C. Linnenberg, Jr., U. S. Dept. Agr. Market. Res. Rept. 237, Washington, June 1958. In briefer form, the present article brings that analysis up to the end of 1957, and shows that the trend as to rail and truck shares of the fresh fruit and vegetable traffic in the period covered by that report has continued. See also a discussion by Ezekiel Limmer in this Situation for April 1956, (MTS-121), entitled "Trucks Continue to Gain in Share of the Freight Traffic," pp. 16-18.

Table 18.- Estimated volume of intercity freight traffic (all commodities combined) in the United States, by mode of transport, 1939-56 1/

Year	Rail		Truck		Inland water carriers		Oil pipelines		Total 2/
	Ton-miles	Percentage of total	Ton-miles	Percentage of total	Ton-miles	Percentage of total	Ton-miles	Percentage of total	Ton-miles
	Billions	Percent	Billions	Percent	Billions	Percent	Billions	Percent	Billions
1939	339	62	53	10	96	18	56	10	544
1940	379	61	62	10	118	19	59	10	619
1941	482	62	81	11	140	18	68	9	772
1942	645	69	60	7	149	16	75	8	929
1943	735	71	57	6	142	14	98	9	1,031
1944	747	69	58	5	150	14	133	12	1,088
1945	691	67	67	7	143	14	127	12	1,027
1946	602	66	82	9	124	14	96	11	904
1947	665	65	102	10	147	15	105	10	1,019
1948	647	62	116	11	162	16	120	11	1,045
1949	535	58	127	14	139	15	115	13	916
1950	597	56	173	16	163	16	129	12	1,063
1951	655	56	188	16	182	15	152	13	1,178
1952	623	54	195	17	168	15	158	14	1,144
1953	614	51	217	18	202	17	170	14	1,204
1954	557	50	215	19	174	15	179	16	1,124
1955	631	49	226	18	217	17	203	16	1,278
1956	656	48	254	19	220	16	230	17	1,360

1/ The transportation covered here includes both for-hire and private. "Intercity freight traffic" means freight, express, and mail moving from farms to cities, and cities to farms, as well as between cities. Traffic shown here does not include natural gas moved by pipelines.

2/ Total shown may differ slightly from the sum of the components, because of rounding. Total includes air carrier ton-miles, which have increased almost every year in the period shown, and passed 0.5 billion ton-miles in 1956. Air carrier ton-miles were less than 0.05 percent of the total, each year; but the percentage increased each succeeding year, 1939-56, except 1953.

Interstate Commerce Commission.

Concern of the railroads about this situation has expressed itself in efforts at obtaining relief from regulatory laws which they consider to be unduly restrictive or discriminatory. Some railroads have also responded with improvements in service or with rate reductions on particular traffic. Piggy-back is one new type of service designed to recapture traffic lost to trucks. This is the practice of hauling loaded truck trailers for substantial distances on rail flatcars, with a short run via highway or street at origin and destination, using a truck tractor for power, and with loading and unloading of box cars and rail refrigerator cars eliminated. 2/ The railroads' interest in new legislation gave rise to extensive hearings this past winter and spring before the Senate Subcommittee on Surface Transportation, 3/ regarding "Problems of the Railroads," and to various legislative proposals by members of each house of Congress.

The railroads' declining percentage of the total freight moved has been one of the most emphasized points in their demand for legislative action. At the same time, the trucking industry has taken pride in the growth in its ton-mile figure and also in its percentage of the total freight hauled. The water carriers, an ancient form of transport which has had a strong revival in recent decades, are pleased with the increase in the ton-miles moved by them. Despite sharp differences on policy as expressed by representatives of the respective modes of transport in their congressional testimony and otherwise, they agree that the facts here referred to are important.

The Fresh Fruit and Vegetable Traffic

Trucks have shown a large relative increase in the transportation of fresh fruits and vegetables. For 4 recent years at 13 major cities, table 19 shows the rail and truck unloads of eight fresh fruits and vegetables combined. For the group of cities as a whole, the truck share of the unloads increased from 53 percent in 1951 to 62 percent in 1957. Seattle had to be omitted from the 1957 data because truck figures were unavailable there for the period after August 31, 1957; but Seattle is decidedly a truck market, so far as fresh fruits and vegetables are concerned. Hence its absence from the 1957 totals probably understates rather than exaggerates the importance of trucking into the group of cities.

In 1951, eight cities of the group studied had truck unloads amounting to more than 50 percent of the total. The other five cities were Boston, Chicago, Cleveland, New York City, and Philadelphia, with truck percentages ranging from 47 percent down to 20 percent. Significantly, these five are not very near to California or Florida, the two leading States in fruit and vegetable production. Here the distance factor helped rail traffic. Not until 1957 do the figures show any of these five cities with a truck share above 50 percent--a bare 51 percent for Philadelphia in that year.

2/ See this Situation for October 1954, pp. 41-43.

3/ A Subcommittee of the Committee on Interstate and Foreign Commerce. See the Subcommittee's report, Problems of the Railroads, April 30, 1958, and the Committee's report, Senate Report 1647, Transportation Act of 1958, June 3, 1958.

Table 19.- Rail and truck unloads of 8 fresh fruits and vegetables at 13 specified major markets, 1951, 1954, 1956, and 1957 1/

Market	1951					1954				
	Rail		Truck		Total	Rail		Truck		Total
	Carlots	Percentage of total	Carlots	Percentage of total	Carlots	Carlots	Percentage of total	Carlots	Percentage of total	Carlots
	Number	Percent	Number	Percent	Number	Number	Percent	Number	Percent	Number
Atlanta, Ga.	3,058	25	9,067	75	12,125	2,803	20	11,122	80	13,925
Baltimore, Md.	6,506	47	7,466	53	13,972	6,816	39	10,497	61	17,313
Boston, Mass.	14,957	70	6,282	30	21,239	16,187	61	10,210	39	26,397
Chicago, Ill.	35,432	80	9,044	20	44,476	31,861	82	6,791	18	38,652
Cleveland, Ohio	9,238	75	3,017	25	12,255	9,681	72	3,795	28	13,476
Denver, Colo.	3,577	47	4,084	53	7,661	2,992	37	5,052	63	8,044
Los Angeles, Calif.	5,336	9	55,843	91	61,179	5,362	9	53,257	91	58,619
New York, N. Y.	43,378	55	36,213	45	79,591	41,053	51	38,825	49	79,878
Philadelphia, Pa.	17,116	53	15,377	47	32,493	17,281	52	16,194	48	33,475
San Francisco-Oakland, Calif.	4,361	22	15,345	78	19,706	3,401	18	15,328	82	18,729
Seattle, Wash.	3,897	42	5,342	58	9,239	3,576	41	5,076	59	8,652
Washington, D. C.	3,652	43	4,784	57	8,436	3,212	40	4,861	60	8,073
13 markets combined	150,508	47	171,864	53	322,372	144,225	44	181,008	56	325,233

Market	1956					1957				
	Rail		Truck		Total	Rail		Truck		Total
	Carlots	Percentage of total	Carlots	Percentage of total	Carlots	Carlots	Percentage of total	Carlots	Percentage of total	Carlots
	Number	Percent	Number	Percent	Number	Number	Percent	Number	Percent	Number
Atlanta, Ga.	2,398	18	10,820	82	13,218	2,282	17	11,082	83	13,364
Baltimore, Md.	6,605	39	10,525	61	17,130	5,910	35	10,876	65	16,786
Boston, Mass.	16,185	63	9,401	37	25,586	17,153	61	11,006	39	28,159
Chicago, Ill.	28,925	75	9,420	25	38,345	27,514	72	10,720	28	38,234
Cleveland, Ohio	9,184	58	6,660	42	15,844	8,741	52	7,954	48	16,695
Denver, Colo.	2,435	26	6,888	74	9,323	1,781	17	8,921	83	10,702
Los Angeles, Calif.	6,012	8	66,298	92	72,310	5,153	7	69,506	93	74,659
New York, N. Y.	39,123	58	28,256	42	67,379	36,650	52	33,354	48	70,004
Philadelphia, Pa.	16,792	50	16,766	50	33,558	16,280	49	17,032	51	33,312
San Francisco-Oakland, Calif.	2,526	13	16,837	87	19,363	1,995	9	19,294	91	21,289
Seattle, Wash.	4,009	39	6,292	61	10,301	2/	---	2/	---	2/
Washington, D. C.	3,295	33	6,565	67	9,860	2,983	28	7,600	72	10,583
13 markets combined	137,489	41	194,728	59	332,217	2/126,442	38	2/207,345	62	2/333,787

1/ The data in this table are for apples, grapefruit, oranges, celery, lettuce, potatoes, tomatoes, and watermelons. The transportation covered here includes both for-hire and private. Truck data have been converted to rail carlot equivalents, and adjusted for incompleteness on the basis of estimates by local representatives of the Market News Branch.

2/ The Market News Branch discontinued collection of truck unloads data for Seattle on September 1, 1957. Hence, no rail or truck data are shown here for Seattle in 1957; and for 1957 the combined markets are limited to the other 12.

Compiled from reports of the Market News Branch, Fruit and Vegetable Div., Agr. Market. Serv.

The cities already showing a truck percentage above 50 in 1951 remained that way in each succeeding year studied. Indeed, every city of the 13 covered in the analysis showed a net increase in the truck percentage between 1951 and 1957 (1956 for Seattle).

Atlanta relies strongly on nearby Florida for fresh produce, and hence truck unloads already were 75 percent of Atlanta's total in 1951. In the same year, Los Angeles and San Francisco-Oakland showed truck shares of 91 percent and 78 percent, respectively, because of their reliance chiefly on California as a source of supply. At Atlanta, Los Angeles, and San Francisco-Oakland the trucks held their ground percentagewise, in each succeeding year studied, or--more commonly--they made a percentage gain. On the other hand, at Boston in 1957, the nearby potato-growing State of Maine was the leading source of supply for fresh produce; but the truck share was still only 39 percent in that year.

One of the smallest changes was at New York City, where the truck share of the unloads of the eight selected fruits and vegetables was 45 percent in 1951 and 48 percent in 1957.

Each of the eight commodities studied accounts for a noteworthy volume of freight. Combining them allows some year-to-year variations in production of any given fruit or vegetable to be partly offset by the variations of other items in the opposite direction. This reduces one source of accidental variation, from year to year, as to how much of the traffic moves by rail and by truck, inasmuch as some commodities are better suited to a given mode of transport than are others.

Similarly, the most significant trend figures shown in the table are for the combined group of cities. At any given city, year-to-year changes in the transportation pattern are, of course, likely to be sharper than for the group of cities.

Unloads data differ from data on receipts. A consignment may be received at a city, sold in the rail car or on the truck, and proceed to another city or town without having been unloaded. Hence at Chicago, for example, the rail share of the receipts of fresh fruits and vegetables is slightly larger than the rail share of the unloads. This reflects the fact that the receiver's reselling the whole consignment to a buyer in another city without having unloaded it is more prevalent in rail movement than in truck movement.

The data here are for carlots, not for car-miles or the like. A carlot of potatoes hauled from Long Island farms into New York City counts the same in these figures as a carlot hauled from Idaho. The cost of railroading and the freight rates charged by railroads taper: They increase less-than-proportionately with the length of haul. Trucking costs and rates are more nearly proportionate to distance. Hence, for any given commodity, the railroads commonly haul a bigger percentage of the long-distance traffic than of the short-distance traffic. In turn, this means that the rail percentage of the fruit and vegetable unloads in any given year would be bigger if the unit of measurement were a car-mile (one car hauled 1 mile) instead of a carlot (a unit which has nothing to do with distance). Only data of the latter type are available on produce traffic of railroads and trucks.

However, what is of chief interest here is the trend over a period of years, not the situation in any single year. For the former purpose, the available data are very suitable.

The number of carlots of the eight selected fruits and vegetables which was unloaded at the group of cities rose only from 322,000 carlots in 1951 to 332,000 carlots in 1956. Not only did the railroads' percentage of total carlots decline but their actual number of carlots also fell. A carlot of produce today is, in many instances, more food than a carlot of the same commodity a few years ago. Carrots without tops, and packed in film bags that are shipped in paper master containers rather than wooden crates, are an example. Another illustration is a precooled carton of lettuce instead of a wooden crate containing lettuce plus ice. 4/ The slow growth in the total number of carlots of the eight selected fresh fruits and vegetables unloaded at the 13 cities is probably also a result of increased use of more highly processed foods, such as frozen fruit juices and frozen cooked foods.

Eggs: Shell and Frozen

The railroads' traffic in eggs, both shell and frozen, is approaching the vanishing point. Table 20 illustrates this with figures regarding three large and widely scattered cities--Philadelphia, Chicago, and Los Angeles. It is based on the available Market News data, which--despite the efforts of AMS to get full coverage--involve a good deal of under-reporting, especially of truck receipts. The data have been adjusted to try to approximate 100 percent coverage. To the extent that the adjusted figures fail to achieve this, the figures tend to understate the relative importance of the truck share of the traffic.

In 1948, for Philadelphia and Chicago combined, the railroads still accounted for 45 percent of the total receipts of frozen eggs. For the three cities combined, the railroads at that time accounted for 26 percent of the total receipts of shell eggs. By 1951 the respective figures had declined to 19 percent and 2 percent. By 1957 they were 6 percent and less than one-half of 1 percent.

That average of 6 percent conceals an important difference. In 1957, 20 percent of the frozen eggs received at Philadelphia still came by rail, while no rail receipts of this commodity were reported at Chicago.

Some of the factors which account for the railroads' loss of the shell egg traffic are also important in the rivalry between railroads and trucks for other perishables and indeed for a wide variety of commodities. These factors include the trucks' speed, their flexibility as to routing and as to timing of runs, and door-to-door service. This last is especially important if the shipper or receiver has no rail spur to his warehouse door--a common lack among smaller firms of many types.

In the transportation of shell eggs, there have been special factors as well. Because of severe impacts generally encountered during rail transportation, shell eggs are subject to considerably more damage in transit when shipped

4/ Fruit and Vegetable Div., Agr. Market. Serv., U. S. Dept. Agr. Chicago Unloads of Fresh Fruits and Vegetables, 1957, "Summary," Chicago, Ill., Feb. 20, 1958.

Table 20.- Rail and truck receipts of eggs at Chicago, Los Angeles, and Philadelphia, 1948, 1951, 1954, 1956, and 1957 1/

Commodity and market	1948					1951				
	Rail		Truck		Total	Rail		Truck		Total
	Quantity	Percentage of total	Quantity	Percentage of total	Quantity	Quantity	Percentage of total	Quantity	Percentage of total	Quantity
	1,000 cases	Pct.	1,000 cases	Pct.	1,000 cases	1,000 cases	Pct.	1,000 cases	Pct.	1,000 cases
Shell eggs:										
Chicago	1,849	27	5,126	73	6,975	123	2	4,933	98	5,056
Los Angeles	341	18	1,501	82	1,842	41	2	2,378	98	2,419
Philadelphia	457	32	967	68	1,424	28	2	1,406	98	1,434
3 markets combined	2,646	26	7,594	74	10,241	192	2	8,717	98	8,909
	1,000 lbs. gross	Pct.	1,000 lbs. gross	Pct.	1,000 lbs. gross	1,000 lbs. gross	Pct.	1,000 lbs. gross	Pct.	1,000 lbs. gross
Frozen eggs:										
Chicago	7,504	31	16,459	69	23,964	3,399	11	27,649	89	31,048
Philadelphia	5,956	98	149	2	6,105	4,806	41	6,840	59	11,646
2 markets combined 3/	13,461	45	16,608	55	30,069	8,205	19	34,489	81	42,694

Commodity and market	1954					1956				
	1,000 cases	Pct.	1,000 cases	Pct.	1,000 cases	1,000 cases	Pct.	1,000 cases	Pct.	1,000 cases
Shell eggs:										
Chicago	7	2/	4,865	100	4,873	40	1	4,770	99	4,810
Los Angeles	1	2/	3,503	100	3,503	1	2/	3,855	100	3,856
Philadelphia	1	2/	1,342	100	1,343	2	2/	1,462	100	1,464
3 markets combined	9	2/	9,710	100	9,719	43	2/	10,087	100	10,130
	1,000 lbs. gross	Pct.	1,000 lbs. gross	Pct.	1,000 lbs. gross	1,000 lbs. gross	Pct.	1,000 lbs. gross	Pct.	1,000 lbs. gross
Frozen eggs:										
Chicago	1,048	5	18,204	95	19,252	32	2/	23,205	100	23,237
Philadelphia	2,222	18	10,420	82	12,642	2,544	20	9,919	80	12,463
2 markets combined 3/	3,270	10	28,625	90	31,895	2,576	7	33,125	93	35,701

Commodity and market	1957				
	1,000 cases	Pct.	1,000 cases	Pct.	1,000 cases
Shell eggs:					
Chicago	1	2/	4,532	100	4,534
Los Angeles	0	0	4,209	100	4,209
Philadelphia	0	2/	1,370	100	1,370
3 markets combined	2	2/	10,111	100	10,112
	1,000 lbs. gross	Pct.	1,000 lbs. gross	Pct.	1,000 lbs. gross
Frozen eggs:					
Chicago	0	0	30,247	100	30,247
Philadelphia	2,648	20	10,881	80	13,529
2 markets combined 3/	2,648	6	41,128	94	43,776

1/ The transportation covered here includes both for-hire and private. On the basis of estimates by local representatives of the Market News Branch, adjustments for incompleteness have been made in the truck data and, where needed, in the rail data. Totals shown may differ slightly from the sum of the components, because of rounding.

2/ Less than one-half of 1 percent.

3/ No data are available on receipts of frozen eggs at Los Angeles.

Compiled from reports of the Market News Branch, Dairy Div., Agr. Market. Serv.

by rail than when moving by truck. Heavy damage claims on eggs led the railroads in 1948 to adopt tolerance rules applicable on claims for shell egg shipments damaged during rail transportation. In some instances these rules reduced claims by as much as 50 percent of the total loss sustained. The rail share of the shell egg traffic fell rapidly after 1948. Not until 1956 were these tolerance rules held invalid by the Supreme Court. 5/ Moreover, in recent years the railroads have excluded shell eggs from certain downward rate adjustments on frozen eggs and on dairy products.

Some shippers who have changed from rail to truck for shell eggs have let this shift carry over to frozen-egg shipment--the lesser part of their business--even though some of the advantages of truck shipment of shell eggs are unimportant in the movement of frozen eggs. This means that some egg shippers send their frozen eggs by truck simply because they have gotten accustomed to doing this with their shell eggs.

However, frozen eggs generally move longer distances to market than fresh eggs do. The railroads' tapering charges on long hauls and the fact that frozen eggs are less likely to be damaged during rail movement than are shell eggs explains why the railroads have not lost their frozen egg traffic to the trucks as readily as their shell egg traffic.

Competition Between Carriers: A Dynamic Process

What determines the rail and truck shares of freight is a story as varied as the commodities moved. The percentage of the traffic hauled by a given form of transport, or even by a specific railroad, trucking firm, or barge line, also depends greatly upon the respective carriers' ability and willingness to make their services and rates satisfactory to shippers and receivers. Within the past year, one of the nation's larger railraods began piggy-back service for fresh produce from the Lower Rio Grande Valley of Texas to St. Louis with a fast schedule and at rates designed to compete with those of the trucks. The result was a large shift of this produce traffic from over-the-road trucks to piggy-back.

One of the New England railroads was earning about a third of its entire revenue by hauling Maine potatoes, and also a substantial amount from fertilizer as back-haul. This railroad's management became worried about the rapid increase in potato movement out of Maine and fertilizer movement into Maine via highway. Last year it negotiated with the management of other railroads to accomplish a drastic rate reduction on Maine potato shipments within New England and to the Midwest, and a rate cut of 50 percent on fertilizer from Boston to Maine. On potato movements, the minimum load for a carload rate was raised from 36,000 to 50,000 pounds. 6/

5/ 284 I.C.C. 377 (February 4, 1952), Special Regulations, Eggs; 350 U.S. 162 (January 9, 1956), Secretary of Agriculture v. United States et al.

6/ Railway Age, May 5, 1958, page 32.

When two modes of transport or two carriers of the same sort vie with each other for traffic, they may compete as to either the level of charges or the quality of service, or both. In a carrier's efforts at gaining traffic by improving its service, it generally is free of Government control. For much of the transport industry, rates are subject to governmental approval, and the carriers' discretion about rates is exercised within that framework. Nevertheless, in the hauling of any particular commodity, a trend from one mode of transport to another is important in two ways: The loser need not give up the competitive struggle, unless the commodity is wholly unsuited to the kind of transportation service he offers or can develop. The winner is the winner for only today unless he, too, is alert to the shipper's and receiver's needs.